

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
9 October 2003 (09.10.2003)

PCT

(10) International Publication Number
WO 2003/083777 A3

(51) International Patent Classification: G06T 7/00, 5/50

(21) International Application Number:
PCT/IB2003/001183

(22) International Filing Date: 1 April 2003 (01.04.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data: 102 14 763.9 3 April 2002 (03.04.2002) DE

(71) Applicant (for DE only): PHILIPS INTELLECTUAL
PROPERTY & STANDARDS GMBH [DE/DE]; Stein-
damm 94, 20099 Hamburg (DE).

(71) Applicant (for AE, AG, AL, AM, AT, AU, AZ, BA, BB, BE,
BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CY, CZ, DK,
DM, DZ, EC, EE, ES, FI, FR, GB, GD, GE, GH, GM, GR,
HR, HU, ID, IE, IL, IN, IS, IT, JP, KE, KG, KP, KR, KZ,

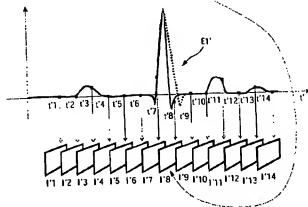
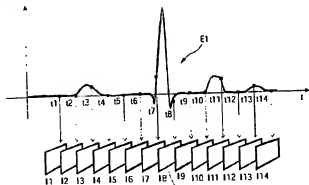
LC, LK, LR, LS, LT, LU, LV, MA, MC, MD, MG, MK, MN,
MW, MX, MY, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC,
SD, SE, SG, SK, SI, SJ, TJ, TM, TN, TR, TT, TZ, UA, UG,
UZ, VC, VN, YU, ZA, ZM, ZW only: KONINKLIJKE
PHILIPS ELECTRONICS N.V. [NL/NL]; Groenewoud-
seweg 1, NL-5621 BA Bindhoven (NL).

(72) Inventors; and
(75) Inventors/Applicants (for US only): MOLLUS, Sabine
[DE/DE]; c/o Philips Intellectual Property & Standards
GmbH, Weissshausr. 2, 52066 Aachen (DE). STUKE,
Ingo [DE/DE]; c/o Philips Intellectual Property & Stan-
dards GmbH, Weissshausr. 2, 52066 Aachen (DE). ECK,
Kal [AT/DE]; c/o Philips Intellectual Property & Standards
GmbH, Weissshausr. 2, 52066 Aachen (DE). AACH, Til
[DE/DE]; c/o Philips Intellectual Property & Standards
GmbH, Weissshausr. 2, 52066 Aachen (DE).

(74) Agent: MEYER, Michael; Philips Intellectual Property &
Standards GmbH, Weissshausr. 2, 52066 Aachen (DE).

[Continued on next page]

(54) Title: METHOD OF DETERMINING AN IMAGE FROM AN IMAGE SEQUENCE



(57) Abstract: The invention relates to a method of determining a corresponding image of a moving object for a reference image from an image sequence which represents the motion as a sequence of states of motion. To this end, two motion signals, representing the development of the relevant motions, are examined for similarities. Using the similarity function thus obtained, that image in the image sequence can be determined which represents at least approximately the state of motion of the object which is represented in the reference image. Furthermore, the invention relates to a system which is suitable for carrying out the method as well as to a computer program and a computer program product enabling a data processing unit to carry out the method.

WO 2003/083777 A3



(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,

ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

(88) Date of publication of the international search report:
22 July 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International Application No.
PCT/IB 03/01183

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G06T7/00 G06T5/50

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 G06T

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

INSPEC, EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	BEIER J ET AL: "Advanced subtraction angiography: mask selection and image registration" COMPUTERS IN CARDIOLOGY 1994 BETHESDA, MD, USA 25-28 SEPT. 1994, LOS ALAMITOS, CA, USA, IEEE COMPUT. SOC. US, 25 September 1994 (1994-09-25), pages 105-108, XP010147930 ISBN: 0-8186-6570-X	1,3-10
Y	abstract sections 3, 5 --- -/-	2

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principles or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

A document member of the same patent family

Date of the actual completion of the international search

Date of mailing of the international search report

13 November 2003

26/11/2003

Name and mailing address of the ISA
European Patent Office, P.B. 5018 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax (+31-70) 340-3016

Authorized officer

Gao, M

INTERNATIONAL SEARCH REPORT

International Classification No.
PCT/IB 03/01183

C/(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		Relevant to claim No.
Category *	Citation of document, with indication, where appropriate, of the relevant passages	
X	US 4 729 379 A (OHE MITSUO) 8 March 1988 (1988-03-08) cited in the application abstract column 3, line 31 -column 5, line 59 figures 3-5 -----	1,3-10
Y	VULLINGS H J L M ET AL: "Automated ECG segmentation with dynamic time warping" ENGINEERING IN MEDICINE AND BIOLOGY SOCIETY, 1998. PROCEEDINGS OF THE 20TH ANNUAL INTERNATIONAL CONFERENCE OF THE IEEE HONG KONG, CHINA 29 OCT.-1 NOV. 1998, PISCATAWAY, NJ, USA, IEEE, US, 29 October 1998 (1998-10-29), pages 163-166, XP010320109 ISBN: 0-7803-5164-9 p.164, section II, paragraph B, lines 7-12 figure 4 -----	2

INTERNATIONAL SEARCH REPORT

INTERNATIONAL SEARCH REPORT

International No.

PCT/IB 03/01183

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4729379	A	08-03-1988	
		JP 1926732 C	25-04-1995
		JP 6057208 B	03-08-1994
		JP 62155835 A	10-07-1987
		DE 3644265 A1	02-07-1987